

LAW OFFICES

KELLER AND HECKMAN

1001 G STREET, N.W.
SUITE 500 WEST
WASHINGTON, D.C. 20001
TELEPHONE (202) 434-4100
FACSIMILE (202) 434-4646

BOULEVARD LOUIS SCHMIDT 87
B-1040 BRUSSELS
TELEPHONE 32(2) 732 52 80
FACSIMILE 32(2) 732 53 92

JOSEPH E. KELLER (1907-1994)
JEROME H. HECKMAN
WILLIAM H. BORGESANI, JR.
MALCOLM D. MACARTHUR
WAYNE V. BLACK
TERRENCE D. JONES
MARTIN W. BERCOVICI
JOHN S. ELDRID
RICHARD J. LEIGHTON
ALFRED S. REGNERY
WILLIAM L. KOVACS
DOUGLAS J. BEHR
RAYMOND A. KOWALSKI*
SHIRLEY A. COFFIELD
MICHAEL F. MORRONE
JOHN B. RICHARDS
JEAN SAVIGNY*
JOHN B. DUBECK
PETER L. DE LA CRUZ
MELVIN S. DROZEN
LAWRENCE F. HALLERIN
RALPH A. SIMMONS
RICHARD F. MANN

C. DOUGLAS JARRETT
SHEILA A. MILLAR
GEORGE G. MISKO
STEPHAN E. BECKER
PATRICK J. HURD
MARK A. SIEVERS
GAREN E. DODGE
JEAN-PHILIPPE MONTFORT*
DAVID G. SARVADI*
JONATHAN R. SPENCER
CATHERINE R. NIELSEN
SUSAN M. HAFEL*
AMY N. RODGERS
ELLIOT BELLOS
MARK L. ITZKOFF
ROSEMARIE A. KELLEY
T. PHILLIPS BECK
ARTHUR S. GARRETT III
LESLIE E. SILVERMAN
ELIZABETH N. HARRISON
ROBERT H. G. LOCKWOOD
CAROL MOORS TOTI
JOAN C. SYLVAIN

MARTHA E. MARRAPESE
DONALD T. WURTH
DAVID B. BERRY
S. DEBORAH ROSEN
DAVID R. JOY
FREDERICK A. STEARNS
TONYE RUSSELL EPPS*
THOMAS C. BERGER
JOHN F. FOLEY*
ALEXANDRE MENCIK*
PHILIP H. ANDREWS*
JENNIFER A. BONANNO*
JOHN REARDON*
PATRICK W. RATKOWSKI*
MARA A. MICHAELS*
PAULA DEZA*
JOHNS W. HOPKINS, JR.*

*NOT ADMITTED IN D.C.
*RESIDENT BRUSSELS

SCIENTIFIC STAFF

DANIEL S. DIXLER, Ph. D.
CHARLES V. BREDER, Ph. D.
ROBERT A. MATHEWS, Ph. D., D.A.B.T.
JOHN P. MODDERMAN, Ph. D.
HOLLY HUTMIRE FOLEY
JUSTIN C. POWELL, Ph. D.
JANETTE HOUK, Ph. D.
LESTER BORODINSKY, Ph. D.
THOMAS C. BROWN*
MICHAEL T. FLOOD, Ph. D.
ANDREW P. JOVANOVIICH, Ph. D.

WRITER'S DIRECT DIAL NUMBER

EX PARTE OR LATE FILED

DOCKET FILE COPY ORIGINAL

March 26, 1996

(202) 434-4129

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

VIA HAND DELIVERY

RECEIVED

MAR 26 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Re: ET Docket No. 95-18;
Amendment of Section 2.106 of the
Commission's Rules to Allocate
Spectrum at 2 GHz for Use
by the Mobile Satellite Service;
Ex Parte Presentation

Dear Mr. Caton:

Pursuant to Section 1.1206 of the Commission's rules, as adopted in the Report and Order in General Docket No. 86-255, 2 FCC Rcd. 3011 (1987), the purpose of this letter is to provide notification that, on Monday, March 25, 1996, the undersigned, on behalf of our client, the American Petroleum Institute ("API"), met with Charles Iseman and Sean White, attorneys with the Office of Engineering and Technology, regarding the above-captioned matter.

During our meeting, we discussed: (1) the potential treatment of Mobile Satellite Services ("MSS") in the band 2165-2200 MHz and existing Fixed Services ("FS") licensees in that band; and (2) the need for further study of spectrum sharing issues which were raised by COMSAT in its Supplemental Comments filed with the Commission on March 14, 1996. Specifically, API believes that the issue of MSS/FS sharing in the band 2165-2200 MHz must be fully studied before the Commission determines that sharing is feasible. In addition, API believes that, if the Commission determines to reallocate the 2165-2200 MHz band from FS to MSS, then the Commission should adopt the proposals contained in its Notice of Proposed Rule Making which would require MSS licensees to both relocate FS incumbents from

No. of Copies rec'd
List ABOVE

041

Mr. William F. Caton
March 26, 1996
Page Two

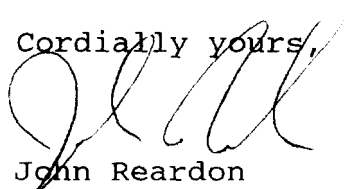
KELLER AND HECKMAN

the band 2165-2200 MHz and to fully reimburse FS incumbents for that relocation.

API supplies herewith the documents presented to the Commission in the course of the oral presentation to Messrs. Iseman and White. These documents summarize efforts of API and other FS users to obtain from COMSAT any spectrum sharing studies it has conducted and API's willingness to supply COMSAT with information about the parameters of incumbent FS systems in the band 2165-2200 MHz for use in any such sharing studies. In addition, these documents describe the decision of WRC-95 to study the MSS/FS sharing issue as an urgent priority for the next WRC conference in 1997.

Kindly place this letter in the public file. Should you have any comments or questions, please do not hesitate to contact the undersigned.

Cordially yours,

A handwritten signature in dark ink, appearing to read 'John Reardon', is written over the typed name.

John Reardon

cc: Charles Iseman, Esquire
Sean White, Esquire

cc:Mail for: Dave Weinreich

Subject: Minutes of 2 GHz Transition Meeting on March 10

From: Sam Nguyen 3/14/95 10:26 AM

To: Jeffrey Binckes

To: Dan Swearingen

To: Nancy Thompson at Server2

To: Jack Hannon at Server2

To: Dave Weinreich at CTS_PO4

To: Raymond Crowell at CWS-OTHER

Introduction

The meeting was attended by representatives from Columbia Spectrum Management, MSS community (AMSC, COMSAT, IRIDIUM) and Fixed Service (National Association of Broadcasters, American Petroleum Institute and Utilities Telecommunications Council).

The purpose of the meeting was to continue the exchange of information on the usage of the 2 GHz by the fixed service and the discussion on the options of relocating versus rechannelizing Electronic News Gathering (ENG) channels to accommodate MSS uplinks, plus a description of an interference model available at COMSAT for analyzing frequency sharing between MSS and fixed service.

Another topic introduced by the Chairman was the FCC Order granting the request by the MSS community to have the Comment and Reply dates of the 2 GHz NPRM extended till May 5 and June 6, respectively.

Fixed Service - Common Carrier and Private Operational Fixed

Don Campbell from the FCC informed the group that the FCC would have the database of all of the U.S. spectrum assignments from 806 MHz and above available on the Internet some time during the week of March 13. This database would be current as of February 7, 1995 in most cases. However, Campbell cautioned that some of the data (e.g. Common Carrier) might still not be as current as those available from Comsearch because of the recent backlog experienced by the FCC in updating the data and the growth in license assignments for the Common Carrier. Campbell also indicated that Bellcore, as a member of the National Spectrum Management Association (NSMA), was in the process of developing a "reader-writer" program that could be used by the Fixed Service, including Broadcast Auxiliary Service, to obtain pre-formatted information on the usage of the spectrum by the different users.

This database would be useful not only for the FS but also for the MSS in assessing the sharing feasibility between the two services. The chairman provided a description of an interference model available from COMSAT to analyze the interference from the MSS satellite downlink into the FS systems and from the FS systems into the MSS satellite uplink. The model could be configured either using data based on typical traffic levels or on real FS system locations and characteristics or on both. The critical parameters needed for the FS would be: transmit EIRP, transmit peak gain, operating bandwidths, off-axis gain pattern, path length, and required C/I criteria. The results of the runs would be statistical in nature in showing: on how often a specified interference criteria would be met, the

distribution of interference level against frequency of occurrence; and the interference level against time.

Representatives from FS (John Reardon of API and Sean Stokes of UTC) felt that the interference model seemed to be a useful tool and should be reviewed by NSMA, the technical frequency coordinator for FS, including POF and CC. Once the model had been accepted by NSMA as the analytical tool for assessing interference into FS, it could be included in the Telecommunication Standard Bulletin as a new section dealing with MSS sharing with FS. NSMA would hold its next meeting on April 25, 1995.

Broadcast Auxiliary Service - Electronic News Gathering (ENG)

Tom Lusk of Columbia Spectrum Management confirmed that the cost for retuning the ENG equipment for a 16 MHz channel bandwidth would be minimal depending on the age of the equipment. According to Lusk, the new equipment would only require a change in the EPROM of the frequency generator. Kelly Williams indicated that NAB would need to obtain a proposal from the ENG equipment manufacturer detailing the exact changes required for both old and new transmitters and receivers for further consideration of this proposal. Williams reiterated that NAB would prefer shifting the first two ENG channels to 2110-2150 MHz over COMSAT's proposal to reduce the ENG channel bandwidths or the proposal to relocate all of the ENG channels at 2 GHz to higher bands at 4.5, 7 or 13 GHz, as suggested by Motorola.

Follow-on Actions

Comsat would solicit Microwave Radio Corp., the largest ENG equipment manufacturer, to provide a cost/technical proposal for retuning the ENG channel to 16 MHz. In addition, Comsat would perform interference modeling of MSS downlink into a real FS system consisting POF and CC obtained from the FCC latest database.

The next meeting will be held at the COMSAT Conference room, 1899 "L" Street, April 10, at 1:30-3:30 pm.

LAW OFFICES

KELLER AND HECKMAN

1001 G STREET, N.W.
SUITE 500 WEST
WASHINGTON, D.C. 20001
TELEPHONE (202) 434-4100
TELEX 49 95551 "KELMAN"
TELECOPIER (202) 434-4646

BOULEVARD LOUIS SCHMIDT 87
B-1040 BRUSSELS
TELEPHONE 32(2) 732 52 80
TELECOPIER 32(2) 732 53 92

JOSEPH E. KELLER (1907-1994)
JEROME H. HECKMAN
WILLIAM H. BORGESANI, JR.
MALCOLM D. MACARTHUR
WAYNE V. BLACK
TERRENCE D. JONES
MARTIN W. BERCOVICI
JOHN S. ELDRED
RICHARD J. LEIGHTON
ALFRED S. REGNIERY
WILLIAM L. KOVACS
CAROLE C. HARRIS
DOUGLAS J. BEHR
RAYMOND A. KOWALSKI
SHIRLEY A. COFFIELD
MICHAEL F. MORRONE
JOHN S. RICHARDS
JEAN SAVIGNY*
JOHN S. DUBECK
PETER L. DELA CRUZ
CHRISTINE M. GILL
MELVIN S. DROZEN
SHIRLEY S. FUJIMOTO
LAWRENCE P. HALPRIN

RALPH A. SIMMONS
RICHARD F. MANN
PETER A. SUSSER
C. DOUGLAS JARRETT
SHEILA A. MILLAR
GEORGE G. MISO
PATRICK J. HURD
MARK A. SIEVERS
GAREN E. DODGE
SUSAN ANTHONY
MICHAEL R. BENNETT
DAVID G. SARVADI*
CATHERINE R. NIELSEN
KRIS ANNE MONTEITH
AMY N. RODGERS
ELLIOT BELLOS
MARK L. ITZKOFF
JEAN-PHILIPPE MONTFORT*
ARCHIE L. HARRIS, JR.
T. PHILLIPS BECK
ARTHUR S. GARRETT III
LESLIE E. SILVERMAN
FRANK C. TORRES III
JOSEPH M. SANDRI, JR.

ELIZABETH F. NEWBILL
TAMARA Y. DAVIS
ROBERT H. G. LOCKWOOD
CAROL MOORS TOTH
JOAN C. SYLVAIN
MARTHA E. MARRAPESE
BARRY J. OHLSON
DONALD T. WURTH
STEPHEN V. KENNEY
S. DEBORAH ROSEN*
DAVID R. JOY
FREDERICK A. STEARNS*
TONY RUSSELL EPPS*
THOMAS C. BERGER*
JOHN F. FOLEY*
JENNIFER A. BONANNO*
PATRICK W. RYKOWSKI*
JOHN REARDON*

*NOT ADMITTED IN D.C.
RESIDENT BRUSSELS

SCIENTIFIC STAFF
DANIEL S. DIXLER, PH. D.
CHARLES V. BREDER, PH. D.
ROBERT A. MATHEWS, PH. D., D.A.B.T.
JOHN P. MODDERMAN, PH. D.
HOLLY HUTMIRE FOLEY
JUSTIN C. POWELL, PH. D.
JANETTE HOUK, PH. D.
LESTER BORODINSKY, PH. D.
THOMAS C. BROWN*
TELECOMMUNICATIONS
ENGINEER
CHARLES F. TURNER
WRITER'S DIRECT DIAL NUMBER

April 12, 1995

(202) 434-4129

→ API 2.1 GHz Group file

Mr. Samuel Nguyen
Comsat Mobile Communications
22300 Comsat Drive
Room 4343
Clarksburg, Maryland 20871

Re: Report of 2 GHz Transition Plan
Ad Hoc Group to IWG-3

Dear Sam:

This letter is to simply confirm the position of American Petroleum Institute (API) concerning the 2.1 GHz MSS Report of the Ad Hoc Group to the IWG-3. As I stated at the April 10, 1995 meeting, API opposes the proposed characterization of the interference model as demonstrating that sharing between MSS and Fixed Services is practical. API believes that the interference model is a useful tool in that it demonstrates the difficulty in sharing. API does not oppose review of the interference model by NSMA or by the TIA committee, TR 14.11, which is presently at work on Telecommunications Standard Bulletin 10-G.

In light of the general opposition to the interference model expressed by other Ad Hoc Group members, including UTC and AMSC, API believes that the interference model did not receive the support of the Ad Hoc Group. In addition, API reiterates the comments made by Glenn Richards of AMSC at the April 10, 1995 meeting that any mention of the interference model in the Report should identify the particular type of MSS satellite which Comsat used in its analysis of the interference model. API echoes concerns previously aired by Tom Lusk of Columbia Spectrum Management that Comsat's analysis of the interference model should not assume that Type A antennas are normally employed by Fixed Services.

API points out that, while on average many of the 2.1 GHz links are shorter than in other bands, many of these links are in fact long haul links. API also believes that the language

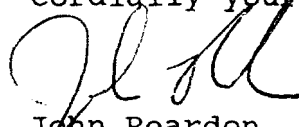
Mr. Samuel Nguyen
April 12, 1995
Page 2

KELLER AND HECKMAN

"virtually all" is too strong to describe the number of links which employ analog equipment, and suggests that this language be replaced by language such as "the majority of" or "most of."

Sam, I appreciate your inclusion of API's position into the Report, and I look forward to continuing this informative process with you and other Ad Hoc Group members. If you have any questions or concerns, please feel free to contact me directly.

Cordially yours,



John Reardon

cc: F.H. (Rick) Smith



MOTOROLA

GOVERNMENT RELATIONS OFFICE

MEMORANDUM

To: Sam Nguyen

From: Phillip Malet

**CC: Richard Barnett
Steve Cheston
Jamie Ennis
Dick Evans
Brian Fontes
Steve Heppe
Cecily Holiday
Thomas Keller
Barry Lamberghman
Alex Latker
Norm Leventhal
Tom Lusk**

**Kaye Nilson
Dave Otten
John Reardon
Glenn Richards
Sean Stokes
Tom Sullivan
Leslie Taylor
Dick Wilder
Kelly Williams
Donald Campbell**

Date: April 11, 1995

Re: Draft Report from Ad Hoc Transition Group

Enclosed are my edits to your draft report to IWG-3. I have also marked up your draft minutes of the last meeting. Please call me if you wish to discuss any of these changes. I feel quite strongly that your draft overstates the extent to which our group has considered Comsat's interference model and would have deep concerns if the draft was sent along to the IWG-3 without the proposed changes.

202 872 1331

MALE COMMENTS
4/14/95

Subject: Report of 2 GHz Transition Plan Ad-Hoc Group to IWG-3

Introduction

Motorola,
recognizing that existing terrestrial users already occupy these bands,
possible
The Adhoc Group was formed to *discuss* deal with the development of a transition plan as part of a U.S. proposal for WRC-95 to gradually introduce Mobile Satellite Service (MSS) in the 2 GHz bands, *before the year 2005.* The group had met 4 times since February 25, 1995. The meetings *were* had been attended by representatives from Columbia Spectrum Management, the FCC, MSS community (AMSC, Comsat, Iridium, Globalstar, TRW, Celsat) and Fixed Service (National Association of Broadcasters, Maximum Service TV, American Petroleum Institute, Cellular Telecommunication Industry Association, Utilities Telecommunications Council).

se bands have
The meetings had been useful in exchanging information on the usage of the 2 GHz by the fixed service and in discussing options to accommodate MSS uplinks in the 1990-2010 MHz band overlapped with ENG usage, and other sharing issues between MSS downlinks and fixed service, including the operational timeframe for cut over of Common Carrier (CC) and Private Operational Fixed (POF) services, if these services had to be relocated.

Broadcast Auxiliary Service: Electronic News Gathering

discussed
The group also dealt with the proposals from the FCC in the 2 GHz NPRM in allocating the 1990-2025 MHz and 2165-2200 MHz to MSS for uplink and downlink, respectively. However, the FCC notes that 1990-2025 MHz band is part of the 1990-2110 MHz band currently used by Broadcast Auxiliary Services, including ENG applications. Therefore, the FCC has proposed to relocate the first 2 ENG channels in the 1990-2025 MHz band into the 2110-2145 MHz band resulting in a contiguous spectrum for ENG from 2025-2145 MHz. However, this relocation of ENG channels would create a domino effect in that the CC and POF in the 2110-2145 MHz would have to be relocated to higher bands since ENG could not *realistically* really share with these incumbent terrestrial users.

Tom Lusk of Columbia Spectrum Management indicated that there were about 10,150 paths total in the paired bands 2110-2130/2160-2180 MHz for CC and 2130-2150/2180-2200 MHz for POF based on the latest information that he obtained from Comsearch. Lusk estimated that the maximum cost to relocate POF and CC would be about \$2.5 Billion assuming a relocation cost of \$250,000 per path. API and UTC had indicated that 5 years would be too soon to relocate POF but 10 years might be a reasonable timeframe for cut over of FS.

could
5 MHz per channel
In order to avoid the *exorbitant* cost of relocating fixed service *just in the U.S. alone*, Comsat had proposed in the Adhoc Group to reduce the ENG channel bandwidth from the 17/18 GHz to 16 MHz. This *minor* reduction in ENG channels would make the band 1990-1998 MHz clear of terrestrial interference for MSS uplink in the initial phase of MSS rollout. The seven ENG channels would be in the band 1998-2110 MHz with first channel at 1998 MHz, and the second at 2014 MHz and so forth.

then
Kelly Williams of NAB had agreed to study this proposal provided there was a technical proposal from a major ENG equipment manufacturer, such as

^{ENG}
Kelly Williams of NAB had agreed to study this proposal provided there was a technical proposal from a major ENG equipment manufacturer, such as Microwave Radio Corp., detailing the exact modifications required for retuning the existing equipments ~~for a smaller bandwidth~~ or indicating whether the equipments would need to be replaced.

^{consider}
Williams stated NAB would ~~likely agree to~~ shifting one or two ENG channels to a nearby band provided that they get the same equivalent spectrum, i.e. 17-18 MHz per channel. According to NAB, the engineering and cost of moving one or two channels is about the same (as long as the move is to adjacent spectrum), because only the frequency generation equipment and amplifiers have to be replaced. This would not apply if the move were to a more distant frequency band.

Williams indicated that NAB was undertaking another survey to be completed by May/June 1993, which would be more comprehensive and representative than the one conducted in 1992. The results will indicate not only the number of equipments at each TV station in different markets but also the age of the equipments.

^{FAG}
The cost of a typical transmitting installation was estimated in the 1992 survey to be about \$19,300 and \$23,000 for a typical receive installation.

Fixed Services (CC and POF)

^{oral}
POF services are resigned to moving out of the band because of the FCC's E.T. Order. In fact, there have been no new procurements or license applications by POF, because they have to operate, according to the Commission Rules, on a Secondary Basis, since January 16, 1992 and the expectation that their existing stations will be bought out by Emerging Technology services coming into the 2 GHz bands. In these bands the links are short haul and narrow band, ~~because the long haul stations were in the 1850-1990 MHz bands, taken over by PCS--~~ already being relocated to higher microwave bands. Virtually all the links employ analog equipment.

^{recently allocated to them}
Common Carrier equipment is digital, mostly used for cellular inter-city links (newer stations). ~~AT&T has already left the band (older stations, not cellular, and MCI and Sprint, which came in later than AT&T, have found the higher bands to be more attractive than 2 GHz. The higher bands have more spectrum than FCC's channelization plan at 2 GHz, so these bands are more useful for high-capacity systems and digital equipment is more available at 4, 6, 10 GHz than at 2 GHz.~~

On-going Sharing Studies between MSS and FS

^{COMSAT}
~~The Ad-Hoc chairman~~ provided a description of an interference model available from COMSAT to analyze the interference from an MSS (e.g., Inmarsat-P) satellite downlink into the FS systems and from the FS systems into the MSS satellite uplink. The model could be configured either using data based on typical traffic levels or on real FS system locations and characteristics or on both. The critical parameters needed for the FS would be: transmit EIRP, transmit peak gain, operating bandwidths, off-axis gain pattern, path length, and required performance criteria. The results of the runs would be statistical in nature in showing: on how often a specified interference criteria would be met, the distribution of interference level against frequency of occurrence; and the interference level against time.

^{the number of links in the 2 GHz band has been growing.}

COM 4/15 He
Representatives from FS (John Reardon of API and Sean Stokes of DIO) stated that the interference model could be a useful tool and should be reviewed by National Spectrum Management Association (NSMA), the technical frequency coordinator for FS, including POF and CC. Once the model had been accepted by NSMA as the analytical tool for assessing interference into FS, it could be included in the Telecommunication Standard Bulletin as a new section dealing with MSS sharing with FS.

LD could also be presented to the appropriate
TIA working group studying
MSS/FS interference issues.



INTERNATIONAL TELECOMMUNICATION UNION

**RADIOCOMMUNICATION
STUDY GROUPS**

Document 8D/XX-E
Document 9D/YY
17 November 1995
Original: English only

**Draft
(Version 2)**

Chairmen of ITU-R Study Groups 8 and 9

**FURTHER STUDIES ON FREQUENCY SHARING BETWEEN
THE MOBILE-SATELLITE SERVICE AND THE FIXED SERVICE
BELOW 3 GHz**

1. Introduction

Following the decisions of the second Radiocommunication Assembly (Geneva, October 1995), and taking into account the decisions of the 1995 World Radiocommunication Conference (Geneva, October-November 1995) (WRC-95), this contribution suggests a future working arrangement for joint study by Working Parties 8D and 9D on frequency sharing between the mobile-satellite service (MSS) and the fixed service (FS) below 3 GHz.

2. Decisions of the 1995 Radiocommunication Assembly and WRC-95

2.1 The 1995 Radiocommunication Assembly approved the draft Recommendations [Doc. 2/6], [Doc. 2/7] and [Doc. 2/8] submitted from Study Group 2. They are now official Recommendations ITU-R IS.1141, IS.1142 and IS.1143, respectively, all of which deal with MSS/FS frequency sharing.

Their titles are as follows:

- * Rec. ITU-R IS.1141 Sharing in the frequency bands in the 1-3 GHz frequency range between the non-geostationary space stations operating in the mobile-satellite service and the fixed service
- Rec. ITU-R IS.1142 Sharing in the frequency bands in the 1-3 GHz frequency range between geostationary space stations operating in the mobile-satellite service and the fixed service
- Rec. ITU-R IS.1143 System specific methodology for coordination of non-geostationary space stations (space-to-Earth) operating in the mobile-satellite service with the fixed service

2.2 In addition, the Assembly decided that further studies on MSS/FS sharing should be jointly carried out by Study Groups 8 and 9, and that the above three ITU-R Recommendations should be assigned to Study Groups 8 and 9.

2.3 The WRC-95 adopted the following Resolutions and Recommendation which are related to MSS/FS sharing:

Resolution 46 (Rev. WRC-95) Interim procedures for the coordination and notification of frequency assignments of satellite networks in certain space services and the other services to which certain bands are allocated.

Resolution COMS-10 Use of frequency bands 1 980 - 2 010 MHz and 2 170 - 2 200 MHz in all three Regions, and 2 010 - 2 025 MHz and 2 160 - 2 170 MHz in Region 2 by the fixed and mobile-satellite services and associated transition arrangements.

- * Recommendation 717 (Rev. WRC-95) Frequency sharing in frequency bands shared by the mobile-satellite service and the fixed, mobile and other terrestrial radio services below 3 GHz.

It should be noted that the scope of Recommendation 717 (Rev. WRC-95) has been expanded so that it now covers all frequency bands below 3 GHz. This indicates that further study by Study Groups 8 and 9 should cover issues related to the frequency bands below 1 GHz, too.

2.4 Therefore, it is necessary to establish an appropriate joint working arrangement of Study Group 8 (Working Party 8D) and Study Group 9 (Working Party 9D). The following section discusses this matter.

3. Suggested joint working arrangement

3.1 One possible approach for joint study will be to create a Joint Working Party or Joint Task Group according to § 2.7 of the revised Resolution ITU-R 1. But such group should be created only when absolutely necessary, because of its financial implications and additional meetings required.

3.2 In order to minimize the impacts on both participants and the ITU budget, the following approach is suggested, at least for an initial stage, without creating a formal joint group.

Working Party 8D will appoint a Liaison Rapporteur (as defined in § 5.2 of the revised Resolution ITU-R 1) and, if necessary, one or more Rapporteurs (as defined in § 2.11 of the revised Resolution ITU-R 1). For our purpose, it may be more appropriate to use the term "Principal Rapporteur" instead of "Liaison Rapporteur".

The role of the Principal Rapporteur will be to coordinate the work of Rapporteurs and to carry out coordination with WP 9D. The role of a Rapporteur will be to carry out study on a specific subject matter for which WP 8D has a primary responsibility, in close collaboration with an Associate Rapporteur appointed by WP 9D. A number of Associate Rapporteurs may be appointed by WP 8D, too, in order to assist Rapporteurs of WP 9D.

3.3 Similarly, WP 9D will also nominate a Principal Rapporteur and, if necessary, one or more Rapporteurs to work in close collaboration with WP 8D for those items of which WP 9D has primary responsibility, and one or more Associate Rapporteurs to assist WP 8D Rapporteurs.

3.4 The Assembly Document 2/1001 (the report of the Chairman of Study Group 2), in its Annex 1, identified 12 items requiring further study to assist in frequency sharing in the band 1-3 GHz, out of which seven items are related to MSS/FS sharing. In order to carry out the joint study efficiently, it seems appropriate to assign the main responsibility for study of each of the seven items to either WP 8D or WP 9D.

Along this line, the following assignment is suggested:

A Study items for which WP 8D is mainly responsible

A1 The development of the standard computer program (SCP) for the coordination procedure (see Recommendation ITU-R IS.1143) (see Note 1)

A2 The development of the computer program for use to facilitate bilateral coordination of the non-GSO MSS (space-to-Earth) with the fixed service (see Notes 1 and 2)

B Study items for which WP 9D is mainly responsible

- B1 Consideration of the standard reference bandwidth for interference calculations e.g. 1 MHz, 4 kHz, or others depending on interference scenarios
- B2 The development of the pfd limits for the MSS (space-to-Earth) systems to share with the FS analogue systems in the frequency bands 1 492 - 1 525 and 1 525 - 1 530 MHz (see Note 3)
- B3 The aggregate interference of point-to-multipoint fixed service at low e.i.r.p. to the MSS (space-to-Earth)* needs study for a larger number of systems
- B4 Considerations of combinations of non-GSO CDMA/FDMA and TDMA/FDMA systems for computation of the aggregate interference to victim fixed service receivers (see Recommendation ITU-R IS.1143) (see Note 4)
- C Study items which require further consideration before assignment (see Note 5)
- C1 Consideration of technical and operational matters in the phased transitional approach for bands shared between the MSS (Earth-to-space) and the fixed service (see Note 5)

3.5 It should be noted that some studies cannot be carried out without close cooperation from the other side. For example, the item B3 requires definition of satellite parameters by WP 8D. In this case, it is definitely necessary to appoint WP 8D Associate Rapporteur for item B3.

Note 1 - Study items A1 and A2 should be jointly developed to result in a single computer program that would accommodate replacing the FS reference parameters with the specific parameters of the FS system requiring bilateral coordination.

Note 2 - FS system parameters to be used in bilateral coordination should be developed mainly by WP 9D.

Note 3 - The WRC-95 adopted coordination thresholds for the FS analogue systems in the bands 1 492 - 1 525 and 1 525 - 1 530 MHz. Therefore, further study on item B2 may not be necessary.

Note 4 - It may be desirable to take account of B4 in developing computer programs for A1 and A2.

Note 5 - In this connection, the WRC-95 adopted Resolution COM5-10 (dealing with transitional arrangements) which requested the ITU-R to develop the necessary planning tools as soon as possible to assist those administrations considering a replanning of their terrestrial fixed networks in the 2 GHz range. WP 9D should consider what planning tools can be provided.

Note 6 - Additional issues, including those related to the frequency bands below 1 GHz should be included, as appropriate.

4. Responsible Study Group for adopting draft Recommendations

4.1 Even if a joint study is conducted under the supervision of two Study Groups, it is desirable that only one responsible Study Group will formally adopt a draft Recommendation in order to simplify the approval process.

4.2 An appropriate principle for determining the responsible Study Group may be as follows (see Note 7):

* Probably "(Earth-to-space)" is correct instead of "(space-to-Earth)" as appears in Doc. 2/1001.

- a draft Recommendation giving constraints on, or protection criteria for, MSS will be adopted by Study Group 8;
- a draft Recommendation giving constraints on, or protection criteria for, FS will be adopted by Study Group 9;
- in case of a mixed draft Recommendation, the responsible Study Group will be decided through consultation.

4.3 All of the Recommendations ITU-R/IS.1141, IS.1142 and IS.1143 are of a mixed type. However, if the contents are closely examined, it seems appropriate that Study Group 8 be responsible for these three Recommendations. (In future, it seems appropriate that these Recommendations include a statement that any revision of the Recommendation should be jointly undertaken by Study Groups 8 and 9).

4.4 Attention should be also given to the examination of the desirability and feasibility of rearranging a Recommendation into two parts, one for Study Group 8 and another for Study Group 9.

4.5 It is interesting to note that the Study Group responsible for study of a certain issue and the responsible Study Group for the relevant Recommendation may not necessarily be the same. For example, if a study on item B1 results in a new reference bandwidth, it will lead to the modifications of Recommendations ITU-R/IS.1141, IS.1142 and IS.1143. This fact demonstrates the need of close cooperation between WP 8D and WP 9D.

Note 7 - For example, in case of FSS to FS interference in SF series Recommendations, Rec. ITU-R SF.615 (Maximum allowable values of interference from FSS to FS) falls in the category of "FS protection criteria", and Rec. ITU-R SF.358 (Maximum pfd limit for satellites) gives a constraint on FSS.

5. Conduct of studies

5.1 Studies should be carried out as much as possible by correspondence using modern means of communication, including E-mail. Principal Rapporteurs and other Rapporteurs should keep close contact with each other. The joint study should demonstrate an efficiency of WP 8D and WP 9D participants.

5.2 The two Principal Rapporteurs are expected to establish a work plan with the agreement of WP 8D and WP 9D, which should be placed under constant supervision and review. If really necessary, the two Principal Rapporteurs may propose to organize (an informal) joint meeting to accelerate and/or finalize the studies. This joint meeting may take advantage of normal meetings of either WP 8D or WP 9D.

5.3 Rapporteurs may be assisted by other experts. For this purpose, it seems appropriate to prepare a list of participants who wish to communicate with each Rapporteur. Such participants may come from both Study Groups.

5.4 In principle, all studies (except for those which may be found not urgent) should be completed within this study period.

5.5 Needless to say, a maximum use should be made of normal meetings of WP 8D and of WP 9D. Principal Rapporteur and other Rapporteurs of WP 8D are invited to participate in the meetings of WP 9D and vice versa. The March 1996 meetings of Working Parties 8D and 9D are in overlap for several days. Such opportunity should be used for an effective joint study.

5.6 If necessary, the following provision of Resolution ITU-R 1 may be also utilized.

"8.7 Contributions for consideration by correspondence submitted well before the date of the meeting should be distributed promptly by the Director".

5.7 In future new study issues may emerge which are not foreseen at the present time. They will also require a joint study by WP 8D and WP 9D in a similar way. This principle may also apply to the case where a third party Study Group is involved.

5.8 Source codes for all computer programs developed for implementing the relevant study items should be made available for review by Working Parties 8D and 9D.

6. Provisional nomination of Rapporteurs

Taking advantage of the WRC-95, the Chairmen of Study Groups 8 and 9 made an informal consultation with delegates attending the Conference. In order to accelerate the studies, the following provisional nomination was suggested:

Principal Rapporteurs:

for WP 8D:	United States of America ?
for WP 9D:	United States of America

Rapporteurs:

	WP 8D (Rapporteur)	WP 9D (Associate Rapporteur)
A1	France	
A2	Japan	

	WP 8D (Associate Rapporteur)	WP 9D (Rapporteur)
B1		Japan
B2		
B3		United Kingdom
B4		[Canada]

	WP 8D	WP 9D
--	-------	-------

C1

7. Preparation of an input to the CPM-97

Recommendation 717 (Rev. WRC-95) is included in § 1.9.1 of the WRC-97 agenda (see Resolution GT PLEN-3 of WRC-95) and Resolution COM5-10 is referred to as an urgent issue in the annex to Resolution GT PLEN-4. Therefore, an input to the CPM-97 on this issue should be prepared.

- 6 -

8D/XX-E

9D/YY-E

Resolution 46 (Rev. WRC-95) is not explicitly included in the WRC-97 agenda, but in view of their urgency, it seems necessary to prepare an input to the CPM-97 on these issues too. Working Parties 8D and 9D are requested to make an appropriate arrangement for such preparations.

RESOLUTION GT PLEN-3

AGENDA FOR THE 1997 WORLD RADIOCOMMUNICATION CONFERENCE

The World Radiocommunication Conference (Geneva, 1995),

considering

- a) that in accordance with Nos. 118 and 126 of the Convention of the International Telecommunication Union (Geneva, 1992), and having regard to Resolution 1 of the Additional Plenipotentiary Conference (Geneva, 1992), the general scope of the agenda for a world radiocommunication conference should be established four years in advance and a final agenda shall be established two years before the conference;
- b) Resolution 3 of the Plenipotentiary Conference (Kyoto, 1994);
- c) the relevant resolutions and recommendations of previous world administrative radio conferences (WARC) and world radiocommunication conferences (WRC),

recognizing

that this Conference identified a number of urgent issues requiring further examination by the 1997 World Radiocommunication Conference (WRC-97),

resolves

to recommend to the Council that a world radiocommunication conference be held in Geneva in late 1997 for a period of four weeks, with the following agenda:

- 1 on the basis of proposals from administrations and the Report of the Conference Preparatory Meeting, and taking account of the results of WRC-95, to consider and take appropriate action in respect of the following topics:
 - 1.1 requests from administrations to delete their country footnotes or to have their country's name deleted from footnotes, if no longer required, within the limits of Resolution [COM4-1];
 - 1.2 issues remaining from WRC-95 including consideration of the VGE Report in accordance with Resolution [COM4-3] and any essential changes to Articles S4, S7, S8, S9, S11, S13, S14 and Appendices S4 and S5 of the simplified Radio Regulations adopted by WRC-95 to ensure consistency between all of their provisions;
 - 1.3 review of Appendix S7 [28] to the Radio Regulations, taking into account Resolution 60 (WARC-79), Resolution 712 (Rev.WRC-95) and Recommendation 711 (WARC-79);
 - 1.4 examination of, and taking necessary decisions on, the question of the HF bands allocated to the broadcasting service in the light of developments to date and the results of the studies carried out by the Radiocommunication Sector, and review of Article 17 [S12] of the Radio Regulations in accordance with Resolution [COM4-2];

1.5 based on the results of the studies to be carried out under Recommendation [GT PLEN-consider changes to the Radio Regulations, as appropriate;

1.6 matters related to the maritime mobile and maritime mobile-satellite services:

1.6.1 the provisions of Chapters IX [Appendix S13] and XIX [Chapter SVII] of the Radio Regulations, as stipulated in Resolution 331 (Mob-87), and appropriate action in respect of the issues dealt with in Resolutions 200 (Mob-87), 210 (Mob-87) and 330 (Mob-87), including maritime certification and licensing issues related to Chapter [SIX] of the Radio Regulations, taking into account that the global maritime distress and safety system (GMDSS) shall be fully implemented in 1999;

1.6.2 the use of Appendix 18 [S18] to the Radio Regulations in respect of the VHF band for maritime mobile communications, and the use and extension of UHF channels contained in S5.287, taking into account Resolution 310 (Mob-87);

1.6.3 Article 61 [S53] of the Radio Regulations relating to the order of priority of communications in the maritime mobile service and in the maritime mobile-satellite service;

1.6.4 review, and if necessary, revision of the provisions related to the NAVTEX coordination in order to release ITU from the obligation to undertake operational coordination for this service operating on 490 kHz, 518 kHz and 4 209.5 kHz, in the light of the consultations undertaken with the International Maritime Organization (IMO) (see Resolution [COM4-7]);

1.6.5 use of the new digital technology in the maritime radiotelephony channels;

1.7 review of Appendix 8 to the Radio Regulations taking into account Recommendation 66 (Rev.WARC-92);

1.8 the possible deletion of all secondary allocations from the band 136 - 137 MHz, which is allocated to the aeronautical mobile (R) service on a primary basis, in accordance with Resolution 408 (Mob-87) and in order to meet the special needs of the aeronautical mobile (R) service;

1.9 taking into account the needs of other services to which the relevant frequency bands are already allocated:

1.9.1 issues concerning existing and possible additional frequency allocations and regulatory aspects as related to the mobile-satellite and fixed-satellite services including consideration of WRC-95 Resolutions [PLEN-1], [COM5-4, COM5-5, COM5-6, COM5-7, COM5-8, COM5-9, COM5-11], [GT PLEN-6] and Recommendation 717 (Rev.WRC-95);

1.9.2 Resolutions 211 (WARC-92), 710 (WARC-92) and Resolution 712 (Rev.WRC-95);

1.9.3 Recommendation 621 (WARC-92);

1.9.4 frequency allocation issues related to the needs of the Earth exploration-satellite service, which are not covered in the above-mentioned Resolutions, namely:

1.9.4.1 allocation of frequency bands above 50 GHz to the Earth exploration-satellite (passive) service;

RESOLUTION GT PLEN-4

**URGENT STUDIES REQUIRED IN PREPARATION FOR THE
1997 WORLD RADIOCOMMUNICATION CONFERENCE**

The World Radiocommunication Conference (Geneva, 1995),

considering

- a) that the agenda of this Conference included consideration of items for the agendas for the 1997 World Radiocommunication Conference (WRC-97) and the 1999 World Radiocommunication Conference (WRC-99);
- b) that items for the agenda for 1997 have been identified in Resolution [GT PLEN-3];
- c) that the 1995 Radiocommunication Assembly established a Special Committee to Address the Review of Regulatory/Procedural Matters, *inter alia*, regulatory issues for WRC-97,

noting

the important progress in ITU-R studies relevant to the preliminary agenda for WRC-97,

resolves

- 1 that ITU-R Task Group 10/5 shall present a report on the progress of studies on Question ITU-R 212/10 to the 1996 Conference Preparatory Meeting (CPM-96);
- 2 that both the ITU-R Special Committee to Address the Review of Regulatory/Procedural Matters and ITU-R Task Group 10/5 shall complete the work identified in Resolution [GT PLEN-2] (WRC-95);
- 3 that ITU-R Working Party 10-11S shall present a report on the progress of studies on Question ITU-R 85-1/11 to CPM-96;
- 4 that both the ITU-R Special Committee to Address the Review of Regulatory/Procedural Matters and Working Party 10-11S shall complete the work identified in Resolution [GT PLEN-1];
- 5 that ITU-R shall complete studies on the topics identified in this Resolution and its Annex and report the results of those studies to CPM-97,

instructs

- 1 CPM-96 to take this Resolution into account when planning the work in preparation for WRC-97;
- 2 the Director of the Radiocommunication Bureau to bring this Resolution to the attention of the meeting of ITU-R study group Chairmen and Vice-Chairmen.

ANNEX TO RESOLUTION GT PLEN-4

Urgent studies required in preparation for WRC-97

- Sharing studies concerning the possible use of the band 1 675 - 1 710 MHz by the mobile-satellite service, in accordance with Resolution 213 (Rev.WRC-95).
- Issues dealing with allocations to space services, in accordance with Resolution 712 (Rev.WRC-95).
- Issues relating to frequency sharing between the mobile-satellite service and terrestrial services at frequencies below 3 GHz, in accordance with Recommendation 717 (Rev.WRC-95).
- Criteria to be applied for the non-GSO fixed-satellite service sharing situations listed in *considering further* of Resolution [PLEN-1].
- Sharing between the FSS and the FS in the 20 GHz band when used bidirectionally by the FSS to provide feeder links for non-geostationary satellite systems in the mobile-satellite service, in accordance with Resolution [COM5-1].
- Calculation of the power flux-density at the geostationary orbit in the 7 GHz band used for feeder links for non-geostationary systems of the mobile-satellite service in the space-to-Earth direction of transmission, in accordance with Resolution [COM5-2].
- Allocation of frequencies to the FSS in the band 15.4 - 15.7 GHz for use as feeder links for non-geostationary-satellite networks operating in the mobile-satellite service, in accordance with Resolution [COM5-4].
- Allocation of frequencies to the fixed-satellite service in the band 15.45 - 15.65 GHz (Earth-to-space) for use as feeder links for non-geostationary satellite networks operating in the mobile-satellite service, in accordance with Resolution [COM5-6].
- Development of interference criteria and methodologies for coordination between feeder links for non-GSO MSS networks and GSO FSS networks in the 20 GHz and 30 GHz bands, in accordance with Resolution [COM5-7].
- Power flux-density level applicable in frequency band 137 - 138 MHz shared by the mobile-satellite service and the terrestrial services, in accordance with Resolution [COM5-5].
- Determination of coordination areas between geostationary and non-geostationary feeder-link earth stations of different administrations operating in opposite directions of transmission, in accordance with Recommendation [COM5-C].
- Sharing studies concerning the use of the bands below 1 GHz by the non-GSO mobile-satellite service, in accordance with Resolution [COM5-8].

RECOMMENDATION 717 (REV.WRC-95)

**FREQUENCY SHARING IN BANDS SHARED BY THE
MOBILE-SATELLITE SERVICE AND THE FIXED,
MOBILE AND OTHER TERRESTRIAL
SERVICES BELOW 3 GHz**

The World Radiocommunication Conference (Geneva, 1995),

considering

- a) that the World Administrative Radio Conference (Malaga-Torremolinos, 1992) made frequency allocations for the mobile-satellite service shared with other terrestrial services below 3 GHz;
- b) that this Conference has adopted sharing criteria for these bands allocated to the mobile-satellite service which require further examination;
- c) that both geostationary and non-geostationary satellites may be operated in the mobile-satellite service;
- d) that the Radiocommunication Assembly (Geneva, 1995) approved Recommendations ITU-R IS.1141, IS.1142 and IS.1143, while identifying certain issues related to frequency sharing between the mobile-satellite service and terrestrial services requiring further study, some of them urgent (see Questions ITU-R 201/8 and 118-1/9),

recommends that ITU-R

study the remaining and urgent issues relating to frequency sharing between the mobile-satellite service and terrestrial services below 3 GHz and report to the 1997 World Radiocommunication Conference (WRC-97) through the Conference Preparatory Meeting,

recommends that administrations

submit contributions relating to these studies to ITU-R, as a matter of urgency,

recommends that the 1997 World Radiocommunication Conference

address the above issues and take appropriate action on them.

*draft*2/12/96 WRC-97 ADVISORY COMMITTEE
INFORMAL WORKING GROUP (IWG)

WORK PROGRAM

IWG-2B

MSS Between 1 and 3 GHz, Including Feederlinks*

IWG-2B should develop proposals and recommendations relating to the following elements:

Agenda Item 1.9.1

Resolution 116 [COM5-4 (WRC-95)]. Preparing appropriate material for and participating in urgent studies for the CPM-97 in order to review power flux-density values in No. [865A] S5.511A of the Radio Regulations relating to the band 15.4-15.7 GHz and to determine out-of band emission limits for space station assignments in the 15.4-15.7 GHz band to protect services in the band 15.35-15.4 MHz.

Resolution 117 [COM5-6 (WRC-95)]. Allocation of frequencies for fixed-satellite service in the band 15.45-15.65 GHz for use by NGSO MSS feederlinks.

Resolution 717 [COM 5-11 (WRC-95)]. Review of allocations to MSS in the 2 GHz range with a view to harmonizing allocations and dates of access on a worldwide basis. IWG-2B should develop proposals and justification for aligning 2 GHz allocations worldwide.

Other Matters

Resolution 25 [PLEN-3 (WRC-95)]. Developing any material relevant to the concerns expressed in this resolution.

Resolution 114 [COM5-3 (WRC-95)]. Use of the band 5091-5150 MHz by NGSO MSS feederlinks, specifically with regard to aeronautical services that may use that band;

Resolution 115 [COM5-2 (WRC-95)]. Calculating the power flux-density at the geostationary-satellite orbit in the band 6700-7075 MHz used for non-geostationary-satellite MSS systems.

Resolution 212 (Rev. WRC-95). Develop positions relating to FPLMTS , considering that the United States does not intend to mandate standards for terrestrial FPLMTS or PCS-type services. And considering that it has allocated the 1850-1990 MHz band for PCS and has identified spectrum from 1990-2025 MHz and 2160-2200 MHz for MSS.

Resolution 213 (Rev. WRC-95). Sharing studies of the band 1675-1710 MHz with a view to using that band for MSS.

Resolution 716 [COM5-10 (WRC-95)]. Use of frequency bands in the 2 GHz range by the fixed service and by the mobile-satellite service and associated transitional arrangements. IWG-2B should place emphasis on transition arrangements that will ease the relocation of 2 GHz terrestrial services, thereby making the bands more useable for MSS.

Resolution 719 [GT-PLN-4 (WRC-95)]. Urgent studies required in preparation for the 1997 World Radiocommunication Conference.

Recommendation 104 [COM5-B (WRC-95)]. Developing power flux-density and e.i.r.p limits for feederlinks of NGSO MSS feederlinks for protection of geostationary satellite service networks in fixed-satellite service bands where No. (2613) S22.2 of the Radio Regulations applies.

Recommendation No. 105 [COM5-C (WRC-95)]. Determining the coordination area around earth stations for geostationary-satellite networks in the fixed-satellite service and for NGSO MSS feederlinks earth stations that operate in the opposite transmission direction.

Recommendation 717 (Rev. WRC-95). Frequency sharing in bands shared by MSS and terrestrial services below 3 GHz.

Recommendation 721 [COM5-A (WRC-95)]. Frequency sharing in the bands 1610.6-1613.8 MHz and 1660-1660.5 MHz between MSS and the radio astronomy service.

Allocation Matters. IWG-2B should address spectrum allocation matters to make available sufficient spectrum in the 1-3 GHz range to meet current and projected demand for MSS. These matters should include whether to pursue at WRC-97 general MSS allocations in the 1.5/1.6 GHz bands and developing proposals and strategies to secure 2 GHz MSS allocations and dates of access common across all three Regions. IWG-2B should also examine proposals of other administrations wishing to implement MSS networks in the 1-3 GHz range and develop appropriate U.S. positions and

proposals in response.

Technical and Operational Matters. IWG-2B should identify and address technical and operational constraints on the use of spectrum in the 1-3 GHz range MSS networks with a view to easing these constraints. __

Regulatory and Procedural Provisions. IWG-2B should identify and refer to IWG-1 for incorporation into that group's work. any changes to regulatory and procedural provisions necessary to ease coordinating, implementing and operating MSS networks in the 1-3 GHz frequency bands;

Note: IWG-2B should also address issues deemed appropriate for its consideration by the Committee Chair and the FCC representatives to IWG-2.

Deadlines:

Recommended proposals, positions and studies should be forwarded for consideration by the Committee of the Whole, the Steering Committee and the Federal Communications Committee as they are agreed upon within IWG-2B. Other deadlines, for example, for periodic full Committee reports, will be established by the WRC-97 Advisory Committee Chair.

* except Ka-Band feederlinks



INTERNATIONAL TELECOMMUNICATION UNION

**RADIOCOMMUNICATION
ASSEMBLY**Document 2/1010-E
3 July 1995

GENEVA, 16-20 OCTOBER 1995

Ref.: Document 2/8

Rec IS.1143

Radiocommunication Study Group 2

*Rec 1143 ?
Check!*

DRAFT NEW RECOMMENDATION ITU-R [DOCUMENT 2/8]

**SYSTEM SPECIFIC METHODOLOGY FOR COORDINATION OF NON-GEOSTATIONARY
SPACE STATIONS (SPACE-TO-EARTH) OPERATING IN THE MOBILE-
SATELLITE SERVICE WITH THE FIXED SERVICE**

(Question ITU-R 202/2)

The ITU Radiocommunication Assembly,

considering

- a) that certain space-to-Earth MSS allocations are shared on a co-primary basis with the fixed service in the range 1 - 3 GHz;
- b) that non-GSO-MSS systems have individually unique system characteristics particularly in relation to orbital parameters, transmission characteristics, altitude, and elevation angle;
- c) that these characteristics may permit opportunities for enhanced sharing with fixed services, when the thresholds set forth in Recommendation ITU-R [Doc. 2/6] (Doc. 2/1008) are exceeded;
- d) that analytical methods, interference criteria, and system characteristics exist describing the FS systems in the shared bands,

recommends

- 1 that the system specific methodology described in Annex 1 be used to assess the need for coordination of non-GSO-MSS networks (space-to-Earth) with fixed service assignments:
 - a) in the frequency bands 1 492 - 1 525 MHz, 1 525 - 1 530 MHz, 2 160 - 2 170 MHz, 2 170 - 2 200 MHz, 2 483.5 - 2 500 MHz and 2 500 - 2 535 MHz;
 - b) when the thresholds set forth in Recommendation ITU-R [Doc. 2/6] (Doc. 2/1008) are exceeded, on the basis of the reference fixed service parameters provided in Annex 2 and the criteria referred to in Annex 1.
- 2 that, in detailed coordination activities, the methodology given in Annex 3 may be used to assess the level of interference into actual FS links.